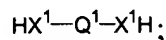


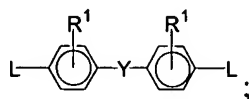
WHAT IS CLAIMED IS:

1. A process, comprising a) reacting monomer A with monomer B to give arylene ether monomer C and b) reacting monomer C with another monomer D to give a polymer, wherein:

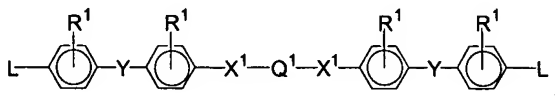
monomer A is



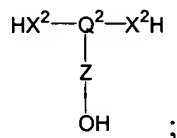
monomer B is



arylene ether monomer C is



monomer D is



Q^1 comprises at least one aryl or heteroaryl group;

Q^2 comprises at least one aryl or heteroaryl group;

X^1 is O bonded directly to an aryl carbon of Q^1 ;

X^2 is O bonded directly to an aryl carbon of Q^2 ;

Z is a linker comprising at least one $\text{---(C(R}^2\text{))}_2\text{---}$ group;

Y is a single bond or a linker group;

L is a nucleophilic aromatic leaving substituent.

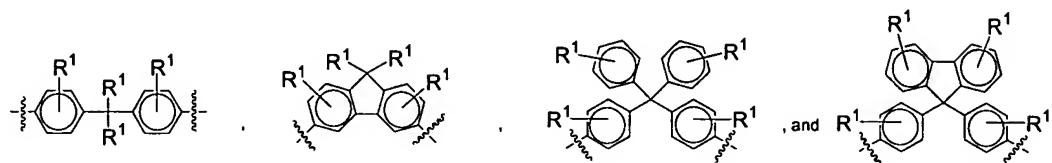
R^1 is independently at each occurrence H, a halogen, an alkyl group, a heteroalkyl group, an aryl group, or a heteroaryl group; and

R^2 is independently at each occurrence H, an alkyl group, or a heteroalkyl group.

2. The process of Claim 1, wherein Q^1 comprises at least two aryl or heteroaryl groups.

3. The process of Claim 2, wherein Q^1 comprises a methylenediphenyl group in which the methylene carbon is bonded to at least 2 phenyl groups.

4. The process of Claim 3, wherein Q^1 is selected from the group consisting of

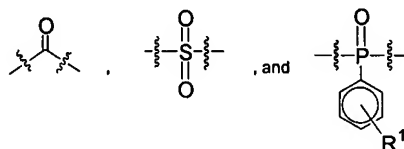


5. The process of Claim 1, wherein Q^1 comprises a polycyclic aromatic ring system or a polycyclic heteroaromatic ring system.

6. The process of Claim 1, wherein Y is a single bond, an alkene or an alkyne group.

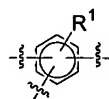
7. The process of Claim 1, wherein Y is a ketone, a sulfone, or a phosphine oxide.

8. The process of Claim 7, wherein Y is selected from the group consisting of



9. The process of Claim 1, wherein Q^2 comprises a 6-membered aromatic or heteroaromatic ring, a polycyclic aromatic ring system, or a polycyclic heteroaromatic ring system.

10. The process of Claim 9, wherein Q^2 comprises



11. The process of Claim 1, wherein Z is $-(CH_2)_n-$ or $-(CH_2CH_2O)_n-$, wherein $n = 1$ to 10.

12. The process of Claim 1, wherein:

- Q^1 comprises a methylenediphenyl group in which the methylene carbon is bonded to at least 2 phenyl groups;
- Q^2 comprises a phenyl ring;
- Y is a single bond;
- and

Z is $-\text{CH}_2-$

13. The process of Claim 12, wherein R^1 is fluorine.

14. The process of Claim 12, wherein L is a halogen, nitro group, or phenylsulfonyl group.

15. The process of Claim 14, wherein L is fluorine.

16. The process of Claim 12, wherein the methylene carbon of Q^1 is bonded to at least three phenyl groups.

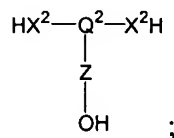
17. The process of Claim 1, wherein reacting monomer A with monomer B to form monomer C comprises heating a mixture of monomer A and monomer B in a dipolar aprotic solvent to at least 110°C .

18. The process of Claim 17, further comprising cooling the reaction mixture of monomer A and monomer B after monomer C is formed and before monomer D is reacted with monomer C.

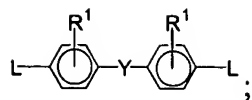
19. The process of Claim 18, wherein reacting monomer C with monomer D to form a polymer comprises heating a mixture of monomer C and monomer D in a dipolar aprotic solvent to at least 110°C , thereby providing a polymer solution.

20. The process of Claim 19, further comprising filtering the polymer solution while the temperature of the polymer solution is greater than about 80°C .

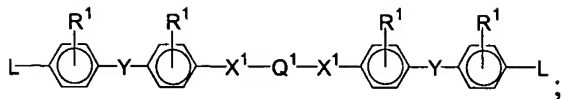
21. A process, comprising a) reacting monomer A with monomer B to give arylene ether monomer C and b) reacting monomer C with another monomer D to give a polymer, wherein:
monomer A is



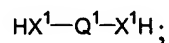
monomer B is



arylene ether monomer C is



monomer D is



Q^1 comprises at least one aryl or heteroaryl group;

Q^2 comprises at least one aryl or heteroaryl group;

X^1 is O bonded directly to an aryl carbon of Q^1 ;

X^2 is O bonded directly to an aryl carbon of Q^2 ;

Z is a linker comprising at least one $-(\text{C}(\text{R}^2)_2)-$ group;

Y is a single bond or a linker group;

L is a nucleophilic aromatic leaving substituent.

R^1 is independently at each occurrence H, a halogen, an alkyl group, a heteroalkyl group, an aryl group, or a heteroaryl group; and

R^2 is independently at each occurrence H, an alkyl group, or a heteroalkyl group.